

## Abstract

A hydrocarbon reforming catalyst which maintains carrier strength even after a long-term thermal history and which exhibits high catalytic activity is prepared by causing at least one noble metal component selected from among a ruthenium component, a platinum component, a rhodium component, a palladium component, and an iridium component to be supported on a carrier containing manganese oxide, alumina, and at least one compound selected from among lanthanum oxide, cerium oxide, and zirconium oxide, or a carrier containing silicon oxide, manganese oxide, and alumina. By use of the reforming catalyst, hydrogen is produced through steam reforming (1), autothermal reforming (2), partial-oxidation reforming (3), or carbon dioxide reforming(4). A fuel cell system is constituted from a reformer employing the reforming catalyst, and a fuel cell employing, as a fuel, hydrogen produced by the reformer.